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The articulation of a rationale for Project Africa's instructional program, the collection of materials for improving inquiry-oriented instruction at the secondary level about Africa south of the Sahara, and the preparation of teaching and study guides have been completed. This geographic region, rather than the whole continent, was chosen to allow for an in-depth study of a unique African region, the understanding of which "is vital to any understanding of the African continent." The development of learning materials was based on teaching the student to identify the purpose for inquiry, to build and test a hypothesis, to draw conclusions, and to apply those conclusions to new data. The curriculum was divided into three areas of study: the cultural background of Africans south of the Sahara, the social and economic forces which have affected them in the past, and the impact of modern ideas and technology on the African way of life. (The initiatory unit for the study of Africa south of the Sahara is included.) See ED 030 010, ED 023 692, ED 023 693, and TE 499 919-499 921 for additional Project Africa materials. (MP)

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AFRICA SOUTH OF THE SAHARA

A TEACHING GUIDE

INTRODUCTION

An Experimental Program Of Study For Secondary School Social Studies Students

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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AFRICA SOUTH OF THE SAHARA

An Experimental Program of Study For
Secondary School Social Studies Students

RATIONALE AND INTRODUCTION

PROJECT AFRICA

Carnegie-Mellon University
Pittsburgh, Pennsylvania

1969

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INTRODUCTION

This instructional program has been developed by the staff and consultants of Project Africa, a social studies curriculum development project commissioned by the United States Office of Education. This project was originally located at The Ohio State University. It was moved to Pittsburgh's Carnegie-Mellon University in September 1968.

Project Africa was created on March 1, 1967. It is a 40 month project designed specifically to develop inquiry-oriented instructional materials and guides for use in improving learning about Africa south of the Sahara in grades 7-12 of American schools. The instructional materials contained herein are the first of a number of such materials intended for use in teaching about Africa south of the Sahara in 7-10th grade world geography, world history or world cultures courses. (Materials will be developed later for a senior elective course.) They represent the results of extensive research by teams of experienced teachers, Africanists and education specialists during the summer and fall of 1967 and of limited classroom tryouts during the spring of 1968.

Following nation-wide school evaluations of these materials during the spring of 1969, the results of this research and experimentation, including all materials and guides, will be submitted to the U.S. Office of Education for placement in the public domain. They will then be available to all interested educators. By examining and adapting them to their own situations local schools will thus be able to include a vital, up-to-date, stimulating study of Africa south of the Sahara, its peoples and their culture as an integral part of their secondary school social studies curricula.

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These materials represent the results of the initial phase of Project Africa. They are entirely experimental in nature and intent. They are only approximations of finished instructional materials and are subject to extensive revision and refinement. It is the purpose of the classroom tryouts--for which these have been prepared--to provide the experience and information needed to develop effective and worthwhile materials for use in teaching about Africa south of the Sahara in 7-12th grade social studies programs.

Dr. Barry K. Beyer
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January 1969

NOTE

It must be remembered that the purpose of Project Africa is to design and evaluate inquiry-oriented materials for improving instruction about Africa south of the Sahara at the secondary level. A draft of these materials follows. It is obviously a tentative draft. There are undoubtedly some errors in substance and many arbitrary forms and procedures. If you note errors of fact, they should be corrected immediately.

However, the entire purpose of these classroom tryouts is to determine the workability of a wide-variety of procedures and materials. IT IS THUS IMPORTANT THAT THE LEARNING MATERIALS AND EXPERIENCES HEREIN BE USED AND CARRIED OUT EXACTLY AS DETAILED IN THIS TEACHING GUIDE. This will be the only way to determine what works and what doesn't, what needs to be changed, omitted or added to, and what alternatives ought to be considered.

Of course, criticism, comments and suggestions are vital. Both teachers and students will be asked to evaluate these learning experiences and materials. A separate packet of evaluative devices will be provided each evaluator for this. But, this guide, too, should be used as an additional evaluative device. You should mark it up freely. Note in it at every opportunity and wherever appropriate:

1. What should have been done.
2. What failed.
3. What the students responses were to each key question.
4. What other questions should have been asked.
5. How much time each activity took.
6. The changes needed in the objectives.
7. ....and so on.

HOWEVER, THESE SHOULD BE DONE ONLY AFTER THE ACTIVITY OR UNIT HAS BEEN TAUGHT AS DIRECTED IN THE GUIDE. Errors in student materials should be noted in those included in this guide and communicated immediately to the students.

In addition, it should be pointed out again that:

1. Each Topic is composed of a number of units--an introduction, several special units and a conclusion. Each unit is composed of activities--each activity is designed as a one day (40 minute) learning experience.

2. All materials--student and teacher, alike--are to be returned to the project as soon as the classroom trials have been completed. This is very important since most of our permissions to use copyrighted materials stipulate their use only for this limited experimental effort. They may not be copied or otherwise distributed or retained for any other purpose or use.

3. This copy of the Teaching Guide should be used to note all suggestions, corrections and errors. IT MUST BE RETURNED TO THE PROJECT AT THE CONCLUSION OF THE CLASSROOM TRYOUT. It will provide important data for analysis.

PROGRAM RATIONALE

PROJECT AFRICA
CARNEGIE-MELLON UNIVERSITY
1969

AN EXPERIMENTAL FRAMEWORK
FOR THE STUDY OF
AFRICA SOUTH OF THE SAHARA IN AMERICAN SECONDARY SCHOOLS

Practical and effective materials for use in any worthwhile formal learn
learning experience cannot be developed in a vacuum. They must be directly related to the realities of the instructional situations in which they are to be used. They must be part of or capable of being fitted into the curricular framework in which this instruction is carried on.

Before the instructional materials included here could be designed, a suitable framework had to be identified. Extensive research failed to locate any programatic structure that adequately reflected the realities of nation-wide instruction or the requisites of effective learning about Africa south of the Sahara. Consewuently, such a framework had to be created. This was the first task undertaken by Project Africa. A brief discussion of the assumptions and guidelines underlying this framework follows.

Assumptions Basic to the Development of this Framework

A number of assumptions underly the development of this framework and the materials designed to implement it.

First, it is assumed that, for purposes of study at the secondary level, there does exist a region that can be designated as Africa south of the Sahara. This is, of course, a designation of convenience rather than a precise geographical or cultural delimitation. Certainly it is true that Africa does exist as a single, continental land mass. It is true that the peoples and lands north of the Sahara and those south of the Sahara have a history of economic and cultural contact going back at least five millenia

and that, despite the formidable barrier of this desert, the links between them have never been severed.

But Africa is too big to be understood with any degree of accuracy by a continent-wide survey. Such a survey, especially in the brief time available for it at the secondary level, would, in fact, tend to obscure rather than facilitate meaningful insights about its lands and peoples. It is precisely surveys such as this that have, in fact, led to the erroneous stereotypes and misconceptions which typify what most Americans believe about this region today. Given the great territorial extent, numerous cultural groups and other diverse conditions of this land mass meaningful limits must be assumed. One such limit is the immense Sahara Desert as it stretches across the breadth of this continent.

To the north lie a tier of states predominantly Arab and Berber in population, culture and affiliation. In modern times their links with other Arab states in the Middle East have proved stronger than those they possess with the states of black Africa, pan-Africanism notwithstanding. They have always been part of a non-African world--Phoenician, Greek, Roman, Arab, Turkish--in a sense that no sub-Saharan area has been, at least until the modern era. It is indeed virtually impossible to study or understand the history and culture of northern Africa in isolation from the parallel history and culture of the Middle East and the lands of the Mediterranean Basin.

To the south are states which must be regarded as different, culturally, ethnographically and in their historical experience, from those of the north. Sub-Saharan Africa is obviously no clear-cut culture unit. Yet it does, however, possess two clearly defineable traditions which mark it off not only from northern Africa but from the rest of the world as well. "Black Africa" is an amalgam of hundreds of more or less diverse peoples living betwee the Sudan and the southern tip of the continent. These peoples possess their

own languages, political and social organization, and life styles, but they are all "black Africans" and, as such, distinct. "White Africa", the settler region of the south and center, is also clearly different from those parts of the continent inhabited by indigenous peoples and, for that matter, from anywhere else in the world. Together these comprise a region that is unique. An understanding of this region is vital to any understanding of the African continent and, indeed, of the world as a whole.

Secondly, it is assumed that Africa south of the Sahara is worth studying at the secondary level. There are many reasons for this. Accurate, up-to-date knowledge about this region has an intrinsic value for the citizens of today and tomorrow. Present knowledge of this region and its peoples is a lamentable mixture of myth, stereotype and misinformation. Yet, political, economic, social and other decisions are made at all levels of society on the basis of these generally inaccurate half-truths, beliefs and fantasies. Certainly our continued existence in this rapidly changing world requires that decisions which will affect our own future vis-a-vis the peoples of this or any other region be based on the most accurate and realistic knowledge. False and inaccurate notions about all people must be eradicated. Only by a scholarly, up-to-date, in-depth study of this region will our future citizens secure an accurate picture of this part of their contemporary world. Only through such a study will they develop an understanding of its peoples as human beings who, like themselves, have a long past and high aspirations in a changing world, who create things, express themselves in a wide variety of ways and grapple with the same basic problems as people elsewhere in the world. Then and only then will they be able to make intelligent and realistic decisions regarding their future and that of the world as well.

Finally, study about selected aspects of Africa south of the Sahara can build insights that will enable us to see ourselves as others might see us, to understand ourselves better in relation to other people in our own society and to other societies as well. And, at the same time, it can also serve as a medium through which can be examined problems similar to ours but which, for a variety of reasons, are closed to dispassionate, rational analysis and study.

A third assumption is that selected concepts and generalizations rather than a catalog of factual data should be the prime knowledge objectives of any learning experience. Factual information and data are best <u>used</u> only <u>as a vehicle</u> for the development of broadly applicable conceptual knowledge. The study in our secondary schools of Africa south of the Sahara should point toward the development and application of selected analytical concepts and generalizations applicable to and revealing of human behavior everywhere. Data about this region and its peoples ought to be used to build conceptual structures that will serve to organize and make meaningful later learning about people and institutions in other cultures, in other times.

Fourth, it is assumed that inquiry-oriented teaching and learning strategies are the most creative, rewarding and valid instructional strategies for the secondary social studies. Deliberate, conscious utilization of the skills and processes of inquiring lead not only to the development of more meaningful knowledge but to knowledge that is retained longer, that has greater transferability and that is more relevant and useful to the learner. Employment of these skills stimulates intellectual curiosity and promotes active involvement in the seeking of knowledge. It makes possible a creative dealing with value-laden questions and issues. Learning and applying the techniques of asking questions of data, hypothesizing, verifying hypotheses and drawing conclusions and the myriad of their associated skills helps develop

better than any way yet devised the skills of learning how to learn, skills of critical importance in a world whose most important feature is rapid, almost unlimited and unpredictable change.

Finally, the study of Africa south of the Sahara at the secondary level, or any topic for that matter, cannot be planned in isolation from the broader educational program of which it is a part. The study of this region is merely one small segment of a much larger social studies curriculum. This curriculum is, in turn, only one of many that comprise the formal educational program of our schools. It is the ultimate purpose of this entire program to prepare students to participate effectively in a changing world. It is the role of the social studies in this program to assist in developing those behaviors that will enable youngsters to function as effective citizens in this changing world. In order to accomplish this the social studies today aim to develop:

a) Knowledge of our own and other cultures;

b) Understanding of selected conceptual knowledge drawn from history and the social sciences;

c) Intellectual skills and abilities; and

d) Attitudes and values supportive of these skills and behaviors.

The study of any body of information should be viewed as something more than an end in itself. It must serve the ends of the course and of the broader social studies program of which it is a part; it must aim to introduce, develop and/or reinforce the generalized and conceptual knowledge, intellectual skills and attitudes and values that are the basic objectives of the entire social studies sequence. The proper role of content is as a <u>vehicle</u> for accomplishing broader goals as well as an object of learning itself.

Realities of the Teaching-Learning Situation Basic to the Development of this Framework

Design of this framework has also taken into account relevant characteristics of the secondary social studies curriculum as it now exists and is evolving. Foremost among these factors are those related to the structure and conduct of the programs in which the study of this region is normally included. There are few schools, indeed, that offer courses exclusively on Africa south of the Sahara. There are, however, a small but increasing number of schools that do offer some type of course on selected aspects of the non-Western world in general, including Africa. Yet, all of these courses are commonly reserved for the senior year of school and usually only the better students gain entrance to them.

If the study of Africa south of the Sahara is found anywhere in a social studies program today, it is generally as part of world geography or non-western studies surveys customarily offered in the seventh, eighth or ninth grades or in world (European) history or area studies courses offered at the tenth grade level. There now appear to be several trends affecting these particular courses--on the one hand a trend toward the globalization of the European or world history course and on the other a trend toward creating a regional studies approach to replace the world geography survey. In all of these courses, time allotted to the study of Africa south of the Sahara may vary anywhere from two to twelve weeks.

The study of this region in grades 7-10, regardless of the title of the course in which it is presently found, usually follows a common pattern. It is introduced with a geographical survey followed by quick surveys of the people, economy, government, culture, history and current problems. The traditional world (European) history course usually touches on Africa south

of the Sahara only when it figures in European history, which customarily is during the "Age of Exploration," the "Partition of Africa," and the problems associated with twentieth century nation-building. In general, the content selected for study in all of these is basically descriptive and emphasizes things rather than people. In most instances, too, its acquisition represents the principal goal of the learning experience.

In many schools the content about Africa south of the Sahara included in these courses usually is determined largely by whatever textbooks the schools use and/or movies they can afford to schedule. The vast majority of teachers have little or no academic preparation in the history, geography or culture of this region; only a few have any significant academic training in the disciplines of anthropology or geography. Opportunities for independent study about this region are quite infrequent. Consequently, instruction about Africa south of the Sahara tends to be that of "covering the text" with little deviation at all from it. And, in most instances, these texts are considerably outdated, superficial and didactic.

A second group of factors which are reflected in the design of this program are those related to the nature of the subject matter to be studied and used--in this instance, facts and information about Africa south of the Sahara. This region is one of vast size and diversity. It consists of over three dozen independent nation-states in which live at least eight hundred distinct cultural groups each speaking a language and observing a set of customs and laws of its own. The various facets of its political, economic, cultural and social development and life that could be studied are virtually unlimited. Yet, the time available in most schools for the study of this region may vary from two to a dozen weeks, hardly enough time to get more than a smattering of knowledge about it.

While there is an increasing amount of knowledge and information available about Africa south of the Sahara, it is by no means complete. There are significant gaps in what is now known about this region and its peoples. Scholarly research, however, is narrowing these gaps, and each year vast amounts of new information become available. Not only does this add to what is already known--it very often challenges what was thought to have been true; not only does it help answer questions that already exist--it also raises new questions. Africa south of the Sahara, as a body of content, is in essence an immense amount of information that is being daily enlarged in both quantity and quality.

A third group of factors relate to the nature of the learners and of learning. Many students who take courses in which this region is studied are not there because they elect to be so; their attendance is required. Furthermore, many learners in these courses are of average or below-average academic ability. This is especially true in many world geography courses which are customarily required of the "slower" students while the college-bound are channelled into European history instead.

Moreover, these learners are rarely intellectually involved in these courses. Learning in most secondary school geography courses often consists almost solely of coloring maps, outlining boundaries and memorizing capital cities, major products and the names of famous people. Learning in many other social studies courses consists largely of memorizing what teacher or text asserts is meaningful, significant, true or just to be learned! There seems to be little purpose in these courses beyond that of mastering the facts; consequently most learning is rote and retained barely beyond the unit exam. It is neither transferable to other similar situations--nor even applicable a few years later. Indeed, there seems to be very little relationship between it and the real concerns of thirteen, fourteen and fifteen year-olds.

A considerable amount of classroom instruction in social studies today is essentially expository. Teachers, textbooks, and audio-visual media tell students the essential data, interpret it for them, and explain its significance. In all this the learner is a passive receptor of someone else's knowledge. Because of this, he often fails to learn the content that is assigned him--and he rarely learns how to learn on his own. Many are especially rebuffed in their efforts to learn by the heavy emphasis on reading assignments; many "slow" students are "slow" because they cannot or don't want to read. Yet, they are curious, inquisitive and fully capable of learning if they so desire.

A final group of factors relate to the types of materials and equipment--media--available for use in the social studies classroom. Traditionally, of course, the textbook, teacher monologue, globe and wall map have been the media most frequently employed. In many classrooms they still are. However, teachers in increasing numbers today have access to and use a wide variety of audio and visual media including filmstrips, slides, 16 mm and 8 mm films, tape recorders and record players, picture cards, models, artifacts, works of art and overhead transparencies. In addition, programmed materials, simulations, collections of source data, documents and even literature are finding increasing use in the social studies classroom.

Use of these media is rapidly increasing as publishers produce more and better materials for them and as federal, state and local funds for their acquisition become increasingly available. Teacher training institutions, too, now usually provide training in the use of these media. School systems are now moving in the direction of utilizing the services of full-time audio-visual personnel and even of specialists in the preparation of graphic materials for use with audio-visual equipment. Facilities for large group audio-visual instruction have been included in school buildings for over

a decade and even special facilities for individual and small group learning, utilizing a wide variety of educational media, are being included. Clearly, there is a definite trend today toward the use in learning of a wide variety of educational media to give variety itself, to individualize instruction, to secure a closer approximation of reality and to involve students more actively in the process of learning.

Guidelines Basic to the Design of this Framework

Consideration of the preceding assumptions and factors gave rise to the following propositions for use as guidelines in the development of a framework for a study of Africa south of the Sahara in secondary school social studies courses:

1. This framework and its constituent materials should be immediately useful. They, therefore, must be capable of being used within existing world geography or non-western studies courses in grades 7-9 and/or world cultures or world history courses now being offered in the 10th grade.

2. Each unit should be complete in itself and at the same time part of a sequential whole so that teachers having limited amounts of time available for the study of this region may select individual units most appropriate to their own teaching objectives.

3. These units should be constructed for use by students of average ability but also include materials for use by students of lower as well as above-average ability levels.

4. These units should include as integral learning materials a wide variety of media, especially media which communicate visual as well as auditory images. Those with which most teachers are or soon will be familiar and will have the greatest likelihood of using in the immediate future should be emphasized. These materials should be constructed for use in inquiry-oriented learning experiences. Teaching and explanatory guides must be prepared to accompany all such materials.

5. These materials should include activities suited to large-group, small-group and independent study experiences.

6. The content included and the cognitive objectives sought should be highly selective. Care must be taken to avoid covering everything. Content and objectives selected must be relevant to and consistent with the broader objectives of the course of which the study of Africa is a part as well as of the overall goals of the entire social studies program. Teaching complex ideas with too little knowledge and teaching too much about too many places in too short a time must be avoided. The content selected must be studied in depth.

7. Africa south of the Sahara should be considered only as one of many culture regions. Moreover, it should be viewed as a "world" within itself and be divided for purposes of study into a number of culture regions or groups. The primary emphasis should be on people, the

inhabitants of these regions. Study should focus on various aspects of four or five sub-cultures (selected to represent different regions, different cultures, different forms of government and so on). The students should generalize about their common features and note significant differences, explore how and why these exist and examine the current problems, changes and trends which affect these people. Such a study should lead to the development of understandings which, when evaluated, should lead to the development of generalizations valid for Africa south of the Sahara. <u>These generalizations should then be considered tentative hypotheses and used as tools to investigate other world regions in the quest for valid generalizations about people of other cultures including our own.</u>

8. Emphasis should be on contemporary Africa--who Africans are, how they got to be that way and what they are becoming. Overemphasis on the colonial past should be avoided. A strict chronological survey should be omitted; instead, history should be used as a resource from which to secure insights into the origin and development of the peoples, problems and prospects of Africa today and tomorrow.

9. This region should be studied from the inside--not through the eyes of other cultures. Students should experience first-hand contact with the people of a society, and its culture by using art, literature, music, folklore, artifacts, visual and audio materials and all other materials that reflect or express these people and their way of life. This study

should also emphasize the similarities of people. It should avoid:

a) overemphasizing as typical the exotic, unusual and strange.

b) giving the impression that Africans are inferior to other cultural groups.

c) treating the region only as it relates to the United States.

d) making invidious comparisons.

10. A multidisciplinary approach should be used. No single discipline can paint a complete picture of a culture.

11. This study should not convey any sense of utter finality; it should not appear to offer the ultimate truth about this region. Rather, it should strongly suggest the limitations on what is known as a certainty about Africa. It should suggest open-mindedness and uncertainty. A spirit of inquiry should be reflected and fostered.

12. The learning experiences included in this framework should be learner-centered. Students should be directly involved in developing knowledge by active intellectual inquiry and investigation. The major role of the teacher should be to facilitate learning by guiding, questioning, stimulating, and challenging the students' inquiry. Inquiry strategies of teaching are required to do this.

A Framework for the Study of Africa South of the Sahara in Grades 7-10

The framework that has been designed by Project Africa to structure the learning materials on Africa south of the Sahara is built directly on these aforegoing assumptions, factors and guidelines. It has been designed to facilitate the achievement of the objectives noted above. It is intended to be of immediate use to schools seeking to improve instruction about this region now. It is neither a totally new nor a complete one-semester framework.

Implementation of this framework will not require any drastic revision of an entire social studies curriculum nor even any extensive remodeling of existing courses within that curriculum. It is rather, a program of study on this region that is complete in itself but whose components are each self-contained so that the entire program or any part thereof can be readily plugged into any relevant course that may already exist.

It should be noted further that, for practical reasons, this framework as a whole has been designed to be the first unit in any year-long or sequential study of world cultures at the secondary level. It not only seeks to develop basic understandings about this culture region, but it also builds basic analytical concepts and generalizations which can be used in the study and analysis of any other culture group--including our own. It is derived directly from a consideration of the assumptions, factors and guidelines delimited above. It consists of three topics:

TOPIC I

WHO ARE THE PEOPLES OF AFRICA SOUTH OF THE SAHARA?

This study focuses on a variety of contemporary peoples--including the Hausa, Suku, Bushmen, Ganda, Galla, Kikuyu and Somali . Each of these peoples has been selected to represent a region, a kinship system, a specific way of life, a type of cultural pattern, a form of government or some other feature which, taken together, are characteristic of contemporary Africa south of the Sahara. Emphasis is placed on the study of the habitat, traditions, customs, behavior and institutions of each people in order to identify their fundamental values, mores and beliefs and to make hypotheses about just who these people are and how they are similar or dissimilar to other peoples.

Study of this topic is designed to develop a number of generalizations about human behavior and culture in Africa, generalizations that can serve as hypotheses and organizational structures for later study of other peoples living in other cultures, with the ultimate objective of developing broad generalizations applicable to and descriptive of human behavior in general.

TOPIC II

HOW AND WHY DID THEY GET THAT WAY?

This topic focuses on the social, economic, political and other forces that have been operative in this region over time to shape the way the various pepples studied in TOPIC I now live. It is designed to provide an awareness of the African's awakening sense of history as well as to give an insight into the sources of his feelings and actions today.

Study of this topic is intended to develop insights into and generalizations about the forces that shape contemporary human behavior and institutions in this region; these will then serve as hypotheses and organizational structures for later study of other peoples with the ultimate objective being to develop broad generalizations about the sources of culture and culture change in our world.

TOPIC III

WHAT ARE AFRICANS BECOMING?

Study of this topic is intended to provide an understanding of the nature of forces presently shaping the way Africans live, to understand the move away from individual or family self-sufficiency in the local setting to interdependence in an ever-enlarging world-wide setting, and to understand the continuity in change. The focus of the topic is on what happens to an individual as a result of the operation of these forces; it is a study, in essence, of the impact of change on individual human-beings and on their culture as a whole. The content deals with nation-building, urbanization, education, rising economic expectations, intergroup dynamics, international affairs and creative self-expression. Generalizations developed in the study of this topic will be useful both as hypotheses for further testing and as tools for analysing and structuring similar later studies.

In sum, the framework of study proposed here for use in grades 7-10 in American schools is one which focuses on people, contemporary culture, and individual and group problems relevant to life in the latter part of the Twentieth Century. It is an inquiry-oriented, multi-disciplinary, in-depth study of topics selected because of their intrinsic worth as knowledge as well as their utility in serving as a vehicle for the development of the broader cognitive and affective objectives of the total program of which the study of Africa is but one part.

The framework of study described above is designed to develop meaningful knowledge about the peoples of Africa south of the Sahara with the ultimate goals of developing and refining skills of intellectual inquiry and conceptual knowledge about human behavior and cultures. To do this well requires the use of inquiry-oriented teaching strategies. Basic to the effective use of these strategies, however, is an understanding of the elements and processes of meaningful learning.

Learning and Knowledge

Meaningful learning is a function of the interaction of three separate phenomena--the stimuli or raw data in the environment with which we come in contact, the intellectual skills by which we process this raw data and the conceptual framework of ideas, concepts and generalized knowledge in the mind which gives meaning to this data.

Each individual lives in a multitude of overlapping environments--the environments of family, church, peer group, nation, world and so on. Each of these varies in extent, composition and complexity for each individual. Each consists of a mass of stimuli which are perceived via the audio, visual or other senses. These stimuli or data have no meaning inherent in them--they do not speak for themselves. Rather, they are given meaning only in the mind of the perceiver, by the way in which they are selected, processed, arranged and stored.

The mental processes by which an individual perceives and gives meaning to the stimuli bombarding his senses have been designated by many terms--discovery, reflective thinking, critical thinking, problem

solving, inductive learning and so on. In essence, however, they all involve various mental operations by which selected stimuli are pulled apart, put back together in new combinations and related to each other or to past experience. In this way, these stimuli are given meaning in relation to other stimuli and thus knowledge is formed, refined or elaborated.

But meaningful learning involves more than just data and a process of handling it. It involves also the past experience of the learner, organized conceptually--in terms of basic ideas, generalizations and concepts. These are arrangements of previous sense perceptions structured into meaningful relationships. They serve many purposes. They act as frameworks or categories into which can be directed new data or stimuli from the environment; they compose a frame of reference which not only guides the interpretation of what is perceived but also directs the selection of the exact stimuli on which to focus; they serve as a source of questions by which the environment is probed for relevant meaning. They make what is perceived meaningful by connecting it to previous experience.

None of these, it should be noted, operate in isolation from the others. Selecting stimuli to which to respond or to use involves the combined interaction of all three phenomena--stimuli or data, a mental process and a conceptual framework. Moreover, this is a continuous process. Each element feeds on and gives substance to the others Meaningful learning cannot take place in a vacuum. It requires data either directly from the environment via observation, reading or other direct experience or from remembered experience. And it also requires some type of framework by which these stimuli can be ordered, can be made

meaningful. The purposeful interaction of these phenomena produces meaningful learning.

The Process of Inquiry

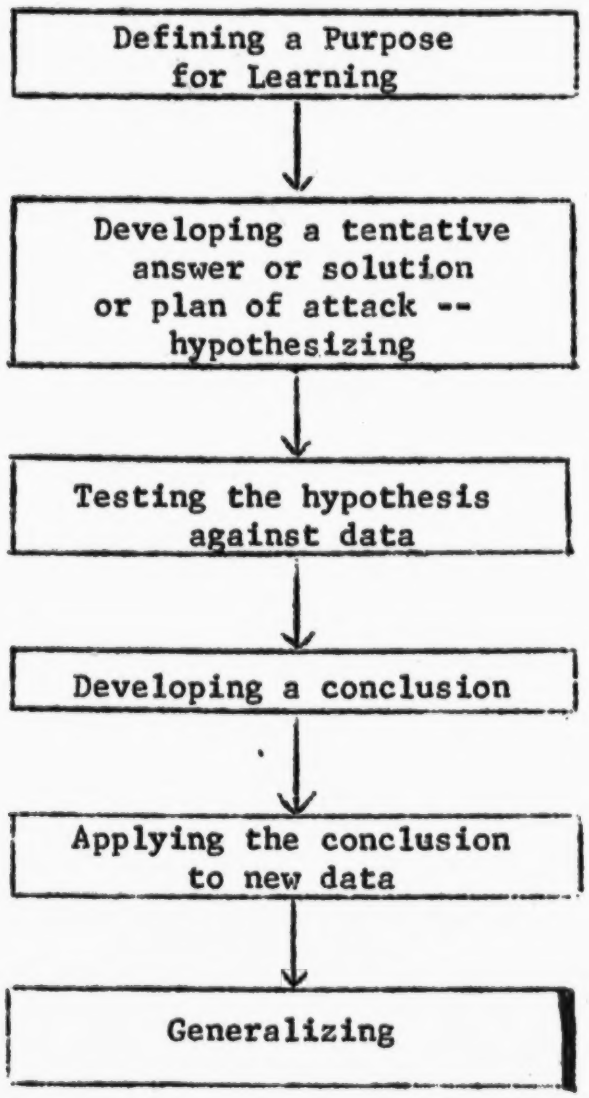
Meaningful learning implies--indeed, it requires--the active, intellectual involvement of the learner. Knowing, in the sense of truly understanding, cannot be given to an individual; it must, rather, be developed by an individual. It is not a result of passive reception. It is the result of deliberate and continued interaction with data. It is something the learner, not the teacher, does. The process by which it is done is best described by the term, inquiry.

Inquiry is essentially finding out for oneself. It is both an attitude and a process. As the former it involves a probing, questioning challenging mind, a lively imagination, a respect for evidence and an open-mindedness, a flexibility of purpose or intent. It involves, too, a persistant and stubborn desire to know, to understand completely. The process of inquiring grows out of this frame of mind and is guided and shaped by it.

As a process for giving meaning to data, inquiry relies on certain tools. These tools are intellectual operations--processes by which the mind manipulates the data which it receives from the senses; they are most commonly referred to as the tools of analysis and synthesis. However, describing precisely how these tools are used is a task not lightly undertaken. Much research remains to be done before anyone can speak with finality on this. Nevertheless, certain aspects can be identified that seem, for the present at least, to represent the major components of this

process. Familiarily with these is necessary if a teaching strategy is to be employed that will facilitate this way of learning and the use and development of the intellectual skills associated with it.

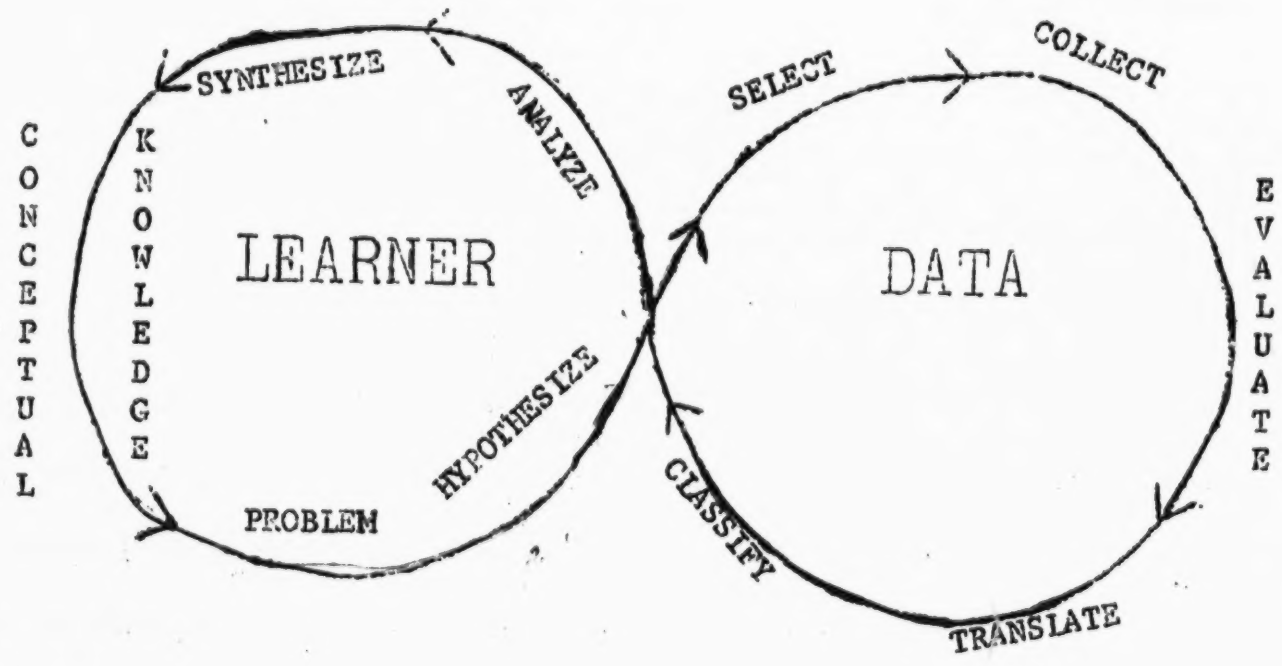
The major steps in the process of inquiry can be diagrammed in terms of what the learner does, consciously or unconsciously, as follows:


Defining a Purpose for Learning
Developing a tentative answer or solution or plan of attack -- hypothesizing
Testing the hypothesis against data
Developing a conclusion
Applying the conclusion to new data
Generalizing

This process involves a number of ways of thinking. It utilizes analytical-deliberate, step-by-step, logical--thinking and intuitive thinking--guessing, hunching, jumping to conclusions. It also involves inductive reasoning, moving from the specific to the general, and deduction--moving from the general to the supporting specifics. It is,

in essence a process consisting of a complex series of acts, some conscious and deliberate, some haphazard and almost automatic. It usually starts with a question, problem,curiosity or some unsettled condition and moves at varying rates of speed to some type of a resolution or conclusion.

Each of the steps in this process, of course, includes numerous other, more precise, intellectual operations--such as evaluating and translating data, classifying and comparing information and making logical inferences or identifying relationships, trends and other types of patterns. The process of inquiring is not linear--it does not proceed uniformly from a simple beginning to a neatly drawn generalization and then stop. On the contrary, it is a continuous process that builds on itself. Its two most important elements are a <u>learner</u> who inquires and the <u>data</u> with which he inquires. Inquiry is a process of learner interaction with data that proceeds thusly:



This is an ongoing process that leads to an ever-expanding and deepening framework of conceptual knowledge--knowledge that is both the origin and final repository of learning. It involves essentially four basic operations, repeated over and over again--the formulation of questions, hypothesizing (developing tentative answers or solutions), testing hypotheses against the data, and drawing conclusions or generalizing on the basis of this testing. It involves working with data to give it meaning. It is an active, learner-centered way of learning.

In the structure of this framework of study on Africa south of the Sahara, inquiry serves as both a means for and an end of learning. The techniques and skills of inquiry are the prime learning tools used with the data contained in these materials. Learning how to use these tools is, at the same time, a major objective of the entire instructional framework.

An Inquiry Strategy for Teaching

There are, of course, a variety of strategies for facilitating learning--for teaching. A teaching strategy is merely a way of arranging specific instructional techniques (such as map work, class discussion, group research, making a bulletin board) into a composite learning experience so as to accomplish predetermined objectives. Most instructional strategies involve the primary techniques of reading, telling and discussing. Inquiry teaching also utilizes these, but it arranges and manipulates them in a way far different from expository teaching.

The inquiry strategy employed in this framework of study is designed to provide for as much learner interaction with the raw data

of the learning environment as possible. It is designed to provide the learner an opportunity to:

1. Identify and clarify a purpose for inquiring;
2. Build a hypothesis--a tentative answer or solution;
3. Test the hypothesis;
4. Draw conclusions;
5. Apply the conclusions in new situations to new data; and
6. Develop meaningful generalizations.

Ideally, inquiry is self-initiated and self-directed. It is directed by the learner's conceptual frame of reference, his past experience, which serves as a framework for questioning and ordering data. However, few secondary school students have either the conceptual framework or intellectual techniques required for independent inquiry. Their previous social studies education has minimized the development of these, concentrating as it has instead on exposition and memorization of factual data. Consequently this framework of study in Africa south of the Sahara is designed to introduce the learners to the basic concepts and intellectual skills needed for independent inquiry and to refine and broaden these by providing increasingly less structured opportunities for their application and development. Each learning experience in these materials is designed to enable the students to use the tools of inquiring.

Identifying a purpose for learning: The most effective learning is purposeful learning. The best purpose is one developed by the learner; it arises from a question, problem, curiosity or perplexing condition

which he perceives and for which he feels a solution is required. However, since most students using these materials will have had little prior experience in self-directed inquiry and in studying other cultures in depth some initiatory problems and questions must be given to the students. In the materials for this study, some problems are presented in the learning materials themselves, such as those which present conflicting interpretations of the same event, or those which present obviously biased and unpopular accounts of a situation, or even those which suggest a "mystery-type" situation. Only after students have gained practice in perceiving and formulating problems into which to inquire, are they provided less structured opportunities for independent inquiry.

In guiding this stage of the learning experience, the teacher must be careful to provide opportunities for the learners to make the problem meaningful, to clarify it and state it in their own terms. New words or phrases have to be identified and defined in the context of the given situation. The problem must also be made manageable by being broken down into a number of related problems or questions, the answer to each of which will provide clues to the resolution of the entire situation.

Hypothesizing: Once a reason for inquiring has been clarified and made manageable, the next operation is one of exploring alternative solutions and formulating tentative answers--hypotheses. To hypothesize is to guess--not wildly, but reasonably utilizing past experience, present available data and a unique perception of the problem that requires solution. This is essentially an inductive process since it proceeds from bits of data to a generalized statement that seems to explain these.

But it does not usually proceed at the same rate of speed or in the same fashion for everyone. It involves both deliberate, step-by-step analysis and intuitive hunching; it may require considerable intellectual effort to arrive at a tentative explanation or one may suddenly "pop-up".

Hypothesizing is a crucial step in inquiring, however. A hypothesis serves two basic functions. It serves as a goal to be reached; when a hypothesis has been validated or refuted, the inquiry is concluded. It also serves as a guide for determining what data is needed, what information should be sought, what evidence is relevant to the problem. Reference to the hypothesis under investigation enables a learner to disregard data that does not bear on it while considering only that which does. If the hypothesis is true, then data supportive of it will exist. The search is thus narrowed to evidence only that bears on the particular hypothesis being investigated. Consequently, a hypothesis must be constantly kept in mind by the inquirer else he will be easily side tracked or perhaps will not know when he has come to the logical conclusion of his investigation.

The learning experiences included in these materials require students to hypothesize answers to problems that are given them or which they develop. The introduction to Topic I of this framework of study is designed to raise the questions "Who are the peoples of Africa south of the Sahara?" and "Why are they the way they are?" Students are then asked to hypothesize answers to these questions and to test their hypotheses. In so doing, there is no stigma of being right or wrong--there is no such thing as a correct or incorrect hypothesis! Rather, all guesses or hypotheses must be recognized for what they are--tentative answers subject to further proof. Even if a teacher knows or suspects

such a guess is really the correct answer, it should be treated as any hypothesis--it must be tested against the relevant evidence.

Hypotheses are developed by quick examination of the available data. This usually involves relevant data culled from a person's remembered experience as well as the data present in the environment that has created the problem in the first place. Thus the traveller who perceives that the well-dressed stranger seated next to him on the bus is going to the same destination that he is, might guess that he is going to attend a wedding when he recalls that such an event is scheduled to take place there the next day.

Teachers directing hypothesis-building experiences must encourage students to look at what data is availalbe, to guess, to identify alternative ways to test their guesses and to determine the type of evidence needed to validate them. They should ask such questions as "How could you account for this?" or "What might be a reason for this?" or "What would be one possible explanation for this?" Continued practice at hypothesizing will encourage students, now generally unaccustomed to doing this, to "open up" and employ this tool on their own. The concluding activities in these materials give them this opportunity.

Testing the hypothesis: This is the key to inquiry. It is a learner-centered activity. It is essentially deductive. It requires, first, determining what type of data is needed to solve the problem or answer the question. This is, of course, dictated by the hypothesis itself, as explained above. It then requires an active search for this data. It may be culled from teacher lectures, textbooks, narrative films, picture cards, primary sources, interviews, maps, graphs, charts or other statistical

tables, novels, poetry, biographies or any of the numerous other media by which information is communicated. This data may be provided by the teacher or the learners may be required to locate it themselves.

Involving students in this process requires, first, that they be given experiences and direction in selecting the kinds of data needed to validate a hypothesis, in collecting this evidence, and in evaluating it for reliability and validity. They must be led to translate it into terms meaningful to them; they must then analyse it. This is a very broad term all too often used without really indicating all that it includes. Analysis of data requires that learners classify it by identifying similarities, differences, trends, sequences, and patterns. This pulling apart and rearranging of data is where real learning takes place. Involvement in the search for meaning by deliberate intellectual manipulation of data leads not only to familiarity with the data--the facts--but also to the development of conceptual knowledge, the ultimate cognitive objective of inquiry.

The analysis of the evidence culminates in a search for relationships, regularities and patterns of significance. Analytical concepts guide this process, but students who have as yet ill-defined concepts require guidance by the teacher. They must be encouraged to make logical inferences from the rearranged data, to find meanings in it. They must be asked and learn to ask themselves such questions as, "What does this all mean?", "So what?", and "In what way is this important?" Important in this stage of the learning are periodic references to the hypothesis being tested in order to keep students on the track and also periodic reviews and summaries of the extent to which the data thus far examined

supports or refutes the hypothesis. Important, too, is recognition of the tentative nature of the hypothesis and of the very real possibility that it might be invalid.

Developing a conclusion: Once the data has been taken apart, it must be reassembled--synthesized--in such a way that it takes on meaning relevant to the hypothesis being tested. This activity concludes the validation step of the inquiry. It is a much more deliberate, analytical process than hypothesizing although the end product is still a conclusion, an explanation that gives meaning to data. But, whereas the hypothesis represents a possible explanation or conclusion, the conclusion synthesized in the process of submitting the hypothetical explanation to the test of the evidence can be held with a far greater degree of certainty. It may merely be a restatement of the hypothesis, although more often than not it represents an elaboration, qualification or some other modification of it. Built as it is on specific but limited data or experience, however, it still tends to be rather restricted in scope and applicability. If a concept, it is usually rather ill-defined. If a statement relating specific concepts together, it is generally limited by specific referents in time and place. Conclusions that result from this stage of inquiry must still be subject to considerable qualification and modification as they are later brought to bear on new data.

In guiding the development of conclusions, the teacher must direct students into learning experiences that require them to arrange identified relationships among data into meaningful wholes. They must be asked to state explicitly the relationships of this rearranged evidence to the hypothesis being investigated. If the results invalidate the

hypothesis, then the student must develop another hypothesis and repeat the testing procedure. If, on the other hand, it affirms the original hypothesis or develops an acceptable answer to the original problem, it can be applied and used as a tool in investigating similar problems and related data.

Generalizing: This involves essentially the same processes as concluding but utilizes a broader range of evidence and experience. In this instance, a conclusion built from a specific set of data assumes the role of a hypothesis. It is quite often modified or broadened in the process of applying it to new data--in using it as a tool to make this data meaningful. As this is done repeatedly it becomes less tied to any one specific set of time and place referents. Instead, it becomes more general, more applicable to a wider variety of data having the same essential characteristics. Thus, it may become a concept or a generalization stating a relationship between several concepts. And in so doing, it becomes part of the conceptual framework of the learner, to be used in structuring future experiences. It becomes knowledge in the deepest sense of the word.

Concluding and generalizing activities are essential to any learning experience based on inquiry. A learner must wrap up his inquiry in order to give it meaning and to provide a springboard for further learning. Those unused to "drawing conclusions", require guidance by the teacher--via written or oral questions--to do this. Others may be able to do it with little direct supervision. That they all do it, however, is essential--without concluding meaningful knowledge cannot be developed and effective learning will not take place.

This, then, is a brief description of an inquiry teaching strategy designed for use in teaching these materials. It is a strategy which requires the students to consciously and deliberately engage in the processes of:

1. Identifying a purpose for inquiring.
2. Building a hypothesis.
3. Testing the hypothesis.
4. Drawing conclusions.
5. Applying the conclusions to new data.
6. Developing meaningful generalizations.

This is not an easy teaching strategy to use--but it is most stimulating and rewarding. Neither is it one that brings instant success. Students unaccustomed to it will experience many moments of frustration and disillusionment, moments made tolerable only by the inner satisfaction of actually coming to know something on one's own. Teachers, too, will find it most difficult. They will especially have to guard against the temptation to <u>tell</u> the meaning or significance of the data being evaluated, against using leading and rhetorical questions and against steering the learners down too narrow a path of inquiry. Awareness of a number of essential features of inquiry-teaching, however, should minimize the dangers of these pitfalls and ensure the successful use of this strategy.

Factors to Consider in Using this Strategy of Teaching

Inquiry is very time-consuming. Knowing is not the product of a few minutes of talking or listening. It is the result only of total immersion in data and in the process of making it mean something. Although there are times when much of the process of inquiry can be accomplished in a single forty-minute class, more often than not it requires many days to inquire thoroughly into some problem or topic. Thus, an entire class period may be devoted only to defining a task or clarifying a problem, the following class period to developing tentative solutions or possible answers, several days more to collecting--from books, teacher lectures and other sources--data relevant to these propositions, another class period or two to testing and perhaps modifying these hypotheses and additional time to drawing meaningful conclusions, applying them in new situations and generalizing. Any course of study that utilizes an inquiry teaching strategy must thus be very selective in the content which it uses as the vehicle to present appropriate data for analysis.

Inquiry is also a learner-centered activity. It involves <u>active</u> learner interaction with data. Students must have frequent opportunities to engage singly and in small groups in experiences designed to foster this. Thus, teacher-centered activities must be kept to a minimum. While there is a definite place in inquiry teaching for lectures or sound films or text books--if the purpose is to present data that is not readily available to the students, constant or repeated use of these techniques and media hinder rather than promote inquiry. Instead,

learners must spend less time in large-group instructional situations and more time in small-group, committee, or individual learning experiences.

The type of materials best used in inquiry learning experiences is quite different from that used in traditional, text book-oriented teaching. It must not communicate what someone else feels is knowledge, or is significant, or is meaningful. Rather, it must present raw, uninterpreted data--statistics, first-hand observations, interpretive accounts, maps, artifacts, pictures--unaccompanied by explanations or descriptions that tell the student what it says, what it means, how it is related to something else or why it is significant. These tasks belong to the student. They are in fact, the very essence of inquiry.

Data is not an end in itself--it is not to be memorized; it's absorption is not the major objective of the learning experience. Instead, it is a vehicle for accomplishing something else, for developing higher levels of knowledge such as concepts or generalizations. It is used, manipulated, pulled apart and refitted into new patterns by the learner in an effort to develop new meanings relevant to the task at hand. This data can be either presented or given directly by the teacher to the students by a lecture or by a piece of written, visual or audio material. Or, it can be researched by the students themselves.

Data is used at every stage of the inquiry process. A certain amount is required to generate a problem, arouse curiosity or create a question in the mind of the learner. Different or additional data is needed to generate a tentative answer or solution--to hypothesize. More data of a specific type is then required to test that hypothesis. If

it proves invalid, then this entire experience becomes part of the data on which to build a new hypothesis and the process repeats. If the hypothesis appears valid, then the resulting conclusion can be only tentatively held until it can be applied to similar data but in another situation. The more it is applied and it stands up, the less tentative, the more generally true, it can be considered. Data is plugged into and used at virtually every step in this process.

Questioning is the key to successful inquiry. The kinds of questions most useful are considerably different from those commonly used in expository teaching or learning. They do not require a mere repetition or description of the facts being studied. On the contrary, they emphasize the why much more than the what, the so-what instead of the how. In so doing, questioning is the major technique for guiding the process of inquiry.

In expository teaching questioning usually serves only as a check to see if the learners can repeat what was read last night or said yesterday. In guiding inquiry, however, much more is required. Students must first be asked to describe in their own words what they have seen, heard or read. This is purely recall. But the questioning does not stop here. Instead, building on the responses and insights thus developed, questions must then be asked which require the identification of commonalities, similarities, relationships and trends within the data. These are then followed by questions designed to probe for new insights, new meanings and significant ideas in the relationships and patterns thus identified. Thus the questions lead someplace rather than merely seek a recounting of what is already known.

Because inquiry proceeds at different rates of speed depending upon the varying intellectual abilities of the learners, questioning customarily takes a variety of forms. Ideally, the questions should be generated by the student, himself. Failing this, however, they may come directly from the teacher. They may be oral or presented in the form of study guides for use by small groups or individuals as they work with various data. These guides may be written or taped or on film, depending on the nature of the activity being undertaken and the materials involved. For students new to this process of learning, the questions may be numerous and explicit; for the more experienced they may be fewer in number and less detailed. But regardless of the media by which they are communicated, they must be carefully devised and presented in a sequence designed to guide inquiry into the data toward a resolution of the problem at hand.

Finally, the role of the teacher in inquiry teaching and in using the materials in this framework of study is considerably different from that of a teacher who utilizes a read-recite-test teaching strategy. The major functions of the teacher using an inquiry strategy are to plan and to facilitate the learning experience--not to tell and test what has been absorbed. Planning is the key. Before the class ever meets, the teacher must select and define the objectives of the experience and then plan the sequence of activities which comprise the total experience. This involves the selection and organization of materials to be used as well as ordering in sequence the activities and techniques such as reading, small group work and questioning to be employed. It involves, in a sense, a complete imaginary run-through of the entire learning experience in order to ensure that the materials and activities are suf-

ficient and properly arranged to help the learner move from perplexity or doubt to resolution. This is by far the most time-consuming and difficult of the responsibilities associated with the use of inquiry-teaching.

Once the experience has been planned, it must be guided to fruition. This requires that the teacher help the learners move from one stage to another in the process of inquiry. He must, for instance, make sure all learners get involved and that all keep on the topic. Moreover, he must keep the communications channels clear by helping students clarify their responses and their appraisal of what to do next. He must "keep them honest" by insisting on the submission of adequate proof for opinions stated or conclusions reached and by offering contradictory or conflicting data or criticism when it is needed. He must prevent superficial treatment of crucial problems, correct errors of fact when necessary, and require periodic summations of the progress to date. At times he may even provide certain essential but hard-to-find data or suggest alternative avenues for further consideration.

Above all, the teacher must create a climate conducive to effective inquiry. This is <u>not</u> done by standing at the front of the room and requiring students to stand to recite. It <u>is</u> done by creating challenging problems for the students to solve, using techniques that foster student interaction and minimize teacher domination and by enthusiastically joining the process as an inquirer himself. It is <u>not</u> done by giving answers or by requiring everyone to come up with the same answer. It <u>is</u> done by providing all students an opportunity to find out for themselves.

The success of inquiry is aided immeasurably by deliberate efforts on the part of the teacher to help the student understand just what he is doing, what mental operations he is involved in, so that he may be more aware of the techniques of inquiring and thus become a more effective inquirer on his own.

In the beginning, the use of inquiry strategies will require rather explicit and continued teacher involvement and even direction, but as the students gain experience and insight into this way of learning, the teacher can become less and less conspicuous as a classroom director. Direction can instead by supplied by the way in which the materials and guides are structured and by the growing familiarity of the students with the operation of a mode of inquiry.

Guiding an inquiry-oriented learning experience is not easy. However, there is no better way to learn how to do it than by attempting it with the aid of instructional guides and materials prepared especially for this type of teaching. The materials and teaching guide included in the pages that follow have been designed precisely for this purpose. Careful reference to these and their adaptation to the requirements of the teacher's students and curricular situation can result in a most stimulating and exciting learning experience about Africa south of the Sahara.

AFRICA SOUTH OF THE SAHARA

AN INTRODUCTION

A TEACHING GUIDE

PROJECT AFRICA

CARNEGIE-MELLON UNIVERSITY

FOR EXPERIMENTAL USE ONLY

1969

I

INTRODUCTION TO AFRICA SOUTH OF THE SAHARA

A TEACHING GUIDE

This is the initiatory unit for the study of Africa south of the Sahara. Its primary purpose is to arouse interest in the study of this region by stimulating the students' curiosity. It is designed to raise questions which only the further study of Africa south of the Sahara can answer. It is also designed to provide some background about the physical geography of this region.

Specifically, the objectives of this activity are:

To know about selected aspects of the geography of Africa south of the Sahara.

To raise questions about Africa south of the Sahara and its inhabitants.

To create a desire to study more about this region.

To be able to interpret visual data.

To be able to make inferences from data.

To be able to identify relationships and make comparisons.

To be able to formulate and state hypotheses.

It is important to note that this activity is designed to launch the study of this region by asking the students first, to become aware of some of Africa's major characteristics; and second, to discover the ways in which people are distributed throughout its terrain; thirdly, to speculate why these people are distributed as they are; and finally to become aware of the mode of inquiry to be used throughout this program.

The familiarity with Africa developed in this process is a necessary prerequisite for the learning experiences that follow; it will, at the same time, be expanded and broadened by these subsequent activities. The hypotheses developed in this introductory experience will also be basic to the learning experiences that follow for they will serve as the tools by which the study of Africa south of the Sahara will be given direction and meaning. The units which follow this Introduction are designed to provide data and learning experiences that will be useful in answering the questions raised and in verifying the hypotheses developed in the course of this initial experience. This unit is the springboard to the entire program of study prepared by PROJECT AFRICA.

This introduction consists of four activities:

Activity	Purpose	Materials
1	To raise questions about Africa south of the Sahara	Filmstrip
2	To become familiar with the region of Africa south of the Sahara.	Resource maps Study Guide #2 Filmstrip
3	To become familiar with the physical features of Africa and its climate.	Resource maps Study Guide #2 Filmstrip Study Guide #4
4	To hypothesize about the peoples of Africa and to become familiar with the steps in a mode of inquiry to be used in this program.	Study Guide #4

INTRODUCTION -- ACTIVITY 1

A TEACHING GUIDE

A) Introduction: The purpose of this activity is to provide a common point for "take off" into the study of Africa south of the Sahara. It is also designed to motivate students to verbalize about their impressions of this region and to want to inquire as to the accuracy of these impressions by visually contrasting images of known stereotypes with images of reality.

Specifically, the objectives of this introductory unit are:

To create a desire to learn more about Africa south of the Sahara and its inhabitants.

To raise questions about the real nature of this region and its peoples.

To articulate the students' image of Africa south of the Sahara.

To be able to interpret visual data.

To be able to make inferences from data.

C) Materials: filmstrip: Africa south of the Sahara #2 (see Notes to the Teacher)

C) Suggested Teaching Strategy:

1) Introduce this study of Africa south of the Sahara by projecting the filmstrip Africa South of the Sahara #2. (allow 5-8 min. for this.)	
a) In projecting frame #1 (Africa in the World) have the students describe the location of the African continent in reference to: the hemispheres equator other continents	
Ask: HOW DOES IT COMPARE IN SIZE TO OTHER CONTINENTS?	Africa is big. It is larger than all other continents except Asia. It is four times the size of Australia, almost three times larger than Europe, etc.
(Emphasize that Africa is a continent, not a nation.)	

b) Project frame #2.

Describe why this study focuses only on Africa south of the Sahara (see rationale pp. 1-3) instead of the entire continent.

c) Project frame #3. Compare Africa in size to that of the U.S.

Africa is about four times the size of the continental U.S., or three times larger than all 50 states of the U.S.

2) To get the students to articulate their image of Africa south of the Sahara project frame #4. "Which of the following pictures were taken in Africa south of the Sahara?" Direct the students to TAKE OUT A SHEET OF PAPER. LIST THE NUMBERS 1-21 ON THE PAPER.

Tell them you are going to project the rest of the filmstrip. It consists of photographs taken in Africa south of the Sahara and in North America. Tell them to WRITE "A" AFTER THE NUMBER OF EACH FRAME YOU THINK WAS TAKEN IN AFRICA SOUTH OF THE SAHARA AND "NA" AFTER THE NUMBER OF EACH FRAME YOU THINK WAS TAKEN IN NORTH AMERICA. Point out that it will be difficult to tell just where some frames were taken.

a) Project the rest of the filmstrip showing each frame without comment. Allow students to view each frame for 3-4 seconds only.

b) Then reshow the filmstrip from the beginning (lion picture). As each frame is shown:

-- Have the class indicate by voice vote or show of hands whether it is in Africa or North America.

and

-- Select one student (a different one for each photo) from the majority to tell why he thinks it is where he said it is -- why it is in Africa or (if in North America) why it is NOT in Africa.

Where the class is about evenly divided over the location of a photo elicit one reason from each side even if they contradict each other.

c) HAVE ALL REASONS GIVEN LISTED ON THE BOARD BY A STUDENT.

(It is not necessary to go through all of the frames nor is a concensus required. The intent is merely to get on the board the students' image of Africa south of the Sahara.)

With 10 minutes remaining, stop the filmstrip. Have the students tally the number of "A's" on their worksheet. Ask: HOW MANY THINK MORE THAN 5 OF THESE WERE TAKEN IN AFRICA SOUTH OF THE SAHARA? -- MORE THAN 10? -- MORE THAN 15? -- MORE THAN 20?

Tell the students that actually 16 of the photos were taken in Africa. Then quickly reshow the filmstrip indicating to the students which pictures were taken in Africa south of the Sahara and which were takin in North America. (see Notes to the Teacher.)

Let the students talk about those photos that were not taken where they thought they were.

For example, the class will say the lion photo is in Africa. Ask one student why he says so. The reason given may be "It is full of wild animals." So have the phrase "wild animals" listed on the board. If the class feels the photo of the city (#2) is in North America because there are no cities like that in Africa then list on the board "no large modern cities." Etc.

A typical student list may include:

Africa south of the Sahara:
full of wild animals
no large modern cities
inhabited by black people
has jungles
does not have factories
use hand tools in farming
do not use farm machinery
has large cities
etc.

3) Ask: WHY DID YOU PUT SOME OF THESE IN AFRICA (OR NORTH AMERICA) WHEN THEY REALLY WERE IN THE OTHER REGION?

Students may say they:
a) were being tricked
b) had erroneous ideas about Africa
c) think many photos could have been either
d) don't know much about it

4) Ask: HOW CAN WE FIND OUT?

Point out that the list on the board represents what they think Africa and its people are like. Tell them the purpose of the next few weeks study will be to see to what extent their ideas are correct or incorrect.

Study more about this region.

5) If time permits, have the students copy the list in their notes. If there is not enough time, copy this list (ditto it and distribute it at the beginning of the next class).

NOTES TO THE TEACHER

Africa In the World

Africa is the second largest of the earth's seven continents. Although it is connected to Asia by the small Isthmus of Suez, it is virtually an island and has the straightest and longest accessible coastline--over 16,000 miles--of any of the continents. It is also the only continent to straddle the equator and thus has the most balanced climate of any of the earth's land areas. It comprises, with Australia and South America, the only significant land area in the southern hemisphere, which is characterized more by its water than its land masses. Thus, nations in this part of the continent, like virtually all of those in South America, find themselves somewhat far-removed from the northern hemisphere centers of political and economic activity that tend to dominate the world scene today.

Size of the Continents (in sq. miles)*

North America	9,300,000	Africa	11,500,000
South America	6,800,000	Australia	2,950,000
Europe	3,750,000	Antarctica	5,300,000
Asia (inc. islands)	16,900,000		

*Source World Almanac, 1967. p. 274

The western coastline of Africa bears a remarkable resemblance to the Atlantic coastline of South America--almost every bulge on one corresponds to an indentation on the other. There are, in fact, many layers of rock, glacial striations and deposits, and fossilized remains of plant and animal life on both continents that are similar, indeed identical. Even the mountains of eastern Argentina have the same structure as those in South Africa. Such remarkable similarities in the features of these land masses have led some scientists to postulate that perhaps at one time South America, Antarctica, Madagascar, India and Africa were all one contiguous body with Africa at the center. This huge land mass, known to geologists as Gondwana, is believed to have fragmented scores of thousands of years ago, the various pieces gradually "drifting" apart to form the continents and islands in the southern hemisphere as we know them today.

Africa and the United States

While North America contains only two nations, the continent of Africa contains nearly 50 independent nations. This continent is approximately four times the size of the 48 states that comprise the continental United States. Even when the areas of Alaska, Hawaii and

its other non-contiguous possessions are added to the area of the continental United States to make a total of 3,557,098 square miles--Africa is still over three times larger. Its 11,500,000 square miles make it larger, in fact, than any continent except Asia, and larger even than Asia without Russia.

While the continental United States reaches barely 2850 miles from coast to coast at its widest point, Africa stretches 4,700 miles from Cape Verde on the west coast of Senegal to Cape Guardafui on the eastern tip of the Horn in Somalia. It is over three times as far from Bizerte, Tunisia to Cape Agulhas in South Africa a distance of over 5000 miles than it is from the United States-Canadian border southward to the United States - Mexican boundary near Brownsville, Texas.

The most populous African nation, Nigeria, while a little over twice the size of California (356,669 sq. miles compared to 158,693 sq. miles) has a population presently estimated at 60,000,000 people. California's 18,600,000 people (est. 1967) make it the most populous of the states but it is not the largest in area--Alaska stretches over 586,400 sq. miles while Texas claims 267,339. Nigeria is bigger than Texas!

INTRODUCTION TO AFRICA

FILMSTRIP

Africa South of the Sahara #2

NOTES TO THE TEACHER

TITLE - AFRICA SOUTH OF THE SAHARA #2
Africa in the World
Africa South of the Sahara
Africa South of the Sahara and the United States
Question: Which pictures were taken in Africa South of the Sahara?

A	1	Amboselli Game Reserve Kenya
NA	2	New York City
A	3	Central Ethiopia
A	4	Residence of a judge, Pretoria, South Africa
NA	5	Okefenokee Swamp, Georgia
A	6	Ruwenzori mountains, western Uganda
A	7	Kalahari desert, South-West Africa
A	8	Near Mweiga, Kenya
A	9	Northern Nigeria, near Kano
A	10	Central Africa Republic
NA	11	Migrant laborers picking broccoli in upstate New York
A	12	Grain fields in Republic of South Africa
A	13	A young Hausa, in Kano, Nigeria
A	14	A Rhodesian farmer
A	15	Market in Ghana
A	16	Store for black Africans near Pretoria, South Africa
NA	17	Near Salt Lake City, Utah, USA
A	18	Cement factory in southern Nigeria
NA	19	Skyscraper in Buffalo, New York
A	20	Bamako, a city on the Niger in Mali
A	21	Oceanfront in Luanda, Angola

PROJECT AFRICA

INTRODUCTION -- ACTIVITY 2

A TEACHING GUIDE

A) Introduction: This activity is designed to familiarize students with the continent of Africa as a whole and with selected features of the region south of the Sahara. It will serve to focus their attention on areas within Africa south of the Sahara, in which live the various peoples to be studied in Topic I.

The specific objectives of this activity are:

To know the location of specific features in Africa south of the Sahara.

To be familiar with the region of Africa south of the Sahara.

To raise questions about the nature of this region and its inhabitants.

To be able to read and interpret maps and charts.

To be able to make inferences from data.

To be able to identify relationships and make comparisons.

To be willing to work cooperatively with a fellow student in the pursuit of knowledge.

B) Materials: Resource maps (10)
Study Guide for Activity 2
Filmstrip -- Africa south of the Sahara #2

C) Suggested Teaching Strategy:

1) Start the class by distributing to each student:
1 set of 10 resource maps
1 study guide for Activity 2

Pair the students with the person sitting across from them. Have them push their desks together if possible.

INSTRUCT THE STUDENTS TO ANSWER ITEMS 1, 2 AND 3 ON THE STUDY GUIDE USING THE MAPS THEY HAVE JUST RECEIVED. They should work as teams but each student is to complete his own study guide because it will be needed later.

(Do not instruct the students how to read or use the maps. Allow them to discover that they can overlay one map on another; the study guide is designed to ask questions to

foster this. It may be useful, however, to have a large wall map of Africa at the front of the room and, before the class begins work, to outline once more the continent of Africa and that part of it referred to as Africa south of the Sahara.)

Instruct each student to put all of these maps into his notebook and to keep them in good condition for they will need them later in the course. They should be kept in a loose leaf or similar binder so they can be taken out and used again just as they are doing today in class.

2) When most of the students have completed items 1 through 3, briefly review the answers they have given.

3) Then distribute the dittoed list made in the preceding class. Have the students identify items descriptive of Africa's topography and climate. Underline these items. Have them add any other descriptive terms they feel are accurate.

4) Project the filmstrip (Africa south of the Sahara #2) frames 3, 7, 8, 9. As this is done, discuss with the class what they see in each. Then have the students compose a brief description of each frame. When each is agreed upon it should be written in the appropriate space in question 4 of the Study Guide.

Frame #3 -- Ethiopia
7 -- Kalahari
8 -- Kenya
9 -- Northern Nigeria

5) Then reshow these 4 frames. Tell the class these are in different climate zones of Africa. Make sure all understand what is meant by the word climate. (Do not present an analysis of the factors that comprise climate.)

Climate can be defined as the average conditions of the weather at a place over a period of time.

6) Then direct the students to continue working in pairs on the answers to the rest of the items on the study guide. What is not completed in class should be finished for homework. Each student is to be prepared to read his answers to item 5 in the next class

NAME_____ ACTIVITY 2

INTRODUCTION TO AFRICA SOUTH OF THE SAHARA

STUDY GUIDE

1. Examine the maps. List in the spaces below the number and title of the map or maps that are needed to determine:

   a) The location of Botswana _____

   b) Areas of Africa lying between sea level and 3000' elevation. _____

   c) Areas covered by grassland and thorn forest. _____

   d) The nation in which Kano is located. _____

   e) The average annual rainfall where the Mech'a Galla live. _____

2. Draw a circle around the name of the nation that is farthest north from the equator:

   Nigeria Uganda

   Botswana Ethiopia

3. Which of the following lies closest to the equator? (Circle the correct answer.)

   Chad Zambia

   Nairobi The Orange River

4. What type of climate and vegetation can be found at each of the following places?

frame	description	climate	vegetation
#	_____ _____	_____	_____
#	_____ _____	_____	_____
#	_____ _____	_____	_____
#	_____ _____	_____	_____

INTRODUCTION -- ACTIVITY 3

A TEACHING GUIDE

A) Introduction: This activity focuses on selected physical features of Africa south of the Sahara. As an extension of the previous activity, it is designed to emphasize the essential elements of climate and to illustrate these visually. It is also designed to establish the physical background for the study of who Africans are and why they are the way they are.

The specific objectives of this activity are:

To know that rainfall, temperature, location and elevation affect climate.

To know that Africa has a variety of climate regions.

To know that vegetation is related to climate.

To know some of the distinguishing features of various African climate regions.

To be able to read a climograph.

To be able to identify relationships among data.

B) Materials: Study Guide for Activity 2
Filmstrip -- Climate Regions in Africa
Resource maps
Study Guide for Activity 4

C) Suggested Teaching Strategy:

1) Start the class by having several volunteers each read one of his or her paragraphs (question 5, Study Guide for Activity 2). Have the rest of the class listen for factors which repeat.	
2) Ask: WHAT FACTORS SEEM TO BE LISTED BY EACH OF THESE REPORTS? Have them examine their own essays to see if these are present. Ask: WHAT SEEM TO BE THE TWO MOST IMPORTANT FEATURES OF CLIMATE?	Students should note: rainfall temperature A few may suggest: winds elevation location

3) Ask: WHAT CAN ONE LOOK AT TO DETERMINE WHAT A CLIMATE IS LIKE?

Students should note:
vegetation

4) Tell the students that you have a series of pictures which help illustrate how vegetation is related to and a product partially of climate. Project the filmstrip (Climate Regions In Africa) stopping to discuss where appropriate. Have the class orally work out the answers to the climograph questions on frame #3 . Do the same with the legendless map in answer to "What are the major climate regions in Africa?"

When the final quiz is shown, have each student note on a piece of scrap paper the type of climate which each of the 5 photos represents. Then project the final frame showing the answers. Discuss or reshow the filmstrip to clarify any questions.

Note: Each climograph depicts data for a specific station located in the climate region being illustrated. The photos that follow, however, are from various places throughout Africa having that same general climate. (see Notes to the Teacher following.

5) To conclude the class, ask: WHAT CAN BE SAID ABOUT AFRICA'S CLIMATE?

Students should suggest:

It is influenced by temperature and rainfall--perhaps even by elevation

There is a great variety of climates in Africa.

Much of Africa is covered by Savanna.

There is little desert or tropical rainforest in Africa south of the Sahara

and so on...

a) Have the students copy these ideas into their notebooks.

b) Ask: WHERE DO YOU THINK MOST AFRICANS LIVE? Accept a few guesses and then distribute the Study Guide for Acrivity 4. Direct the students to complete the items on this study guide using their maps and notes. They should be encouraged to work with a friend, if possible. The study guide is to be completed for use in the next class.

INTRODUCTION

FILMSTRIP

Climate Regions in Africa

NOTES TO THE TEACHER

1 Climate Regions in Africa
2 Introduction to climographs
3 A climograph and questions
4 A climograph
5 Rainfall and temperature
6 Tropical Rainforest
7 Climograph
8 Rainforest - Liberia
9 Rainforest - Ghana
10 Rainforest - Congo
11 Rainforest - Liberia
12 Tropical Savanna
13 Climograph
14 End of dry season - Northern Nigeria
15 Wet season - Northern Nigeria
16 Northern Nigeria
17 Amboselli, Kenya
18 Tropical Savanna Highland
19 Climograph
20 Termite hills - Acholi
21 Uganda
22 Uganda
23 At the foot of Kilimanjaro
24 Highland
25 Climograph
26 Ethiopian highlands
27 New Mlange, Malawi
28 Near Chimala, Tanzania
29 Ethiopian highlands
30 Semi-arid Steppe
31 Climograph
32 Northern Somalia
33 Kalahari Desert - dry season
34 Kalahari - wet season
35 Near Timbuktu
36 Desert
37 Climograph - Khartoum
38 Edge of Kalahari plateau
39 Kalahari
40 Southern Sahara - Sudan
41 Sahara
42 Sub-Tropical
43 Climograph - Durban
44 Near Oudtshoorn, South Africa
45 Northern Transvaal
46 Near Stellarbosch, South Africa
47 New Paarl, South Africa
48 What are the main climate regions of Africa?
49 Map
50 Map with legend
51 Question
52 Number 1 (Northern Nigeria - end of 7-month dry season)
53 Number 2 (Kalahari)
54 Number 3 (Congo rainforest)
55 Number 4 (Tigre Province, Ethiopia)
56 Number 5 (Kenya "white highlands")
57 Map with answers
58 PROJECT AFRICA

NAME_____

ACTIVITY 4

INTRODUCTION TO AFRICA SOUTH OF THE SAHARA

STUDY GUIDE

1. The population of Africa is distributed unevenly over the land. In some places large numbers of people live close together. In other places a few people are scattered over a wide area. In which of the following nations do the people live closest together? (This nation has the most dense population.)

   Botswana — Central African Republic

   Nigeria — Somalia

2. In which of the following nations do the people live farthest apart? (This nation has the sparsest population.)

   Botswana — Nigeria

   Uganda — Ethiopia

3. What is ONE reason you think people congregate in certain places in Africa and not in other places in Africa?

4. If this is true, in what kind of places in Africa would you expect to find people congregated in large numbers?

5. Examine the maps and answer the following:

   a) List the places where there are large groups of people that are where you expected to find them according to your answer to question 4:

   b) List any places where large groups of people ought to be according to your answer to 4 but are not there:

c) What reasons help explain this?

6. a) List the places where there are large groups of people that are not where your answer to question 4 says they should be:

b) What reasons help explain this?

7. How well does your answer to question 3 explain the pattern of population distribution in Africa?

8. IF YOUR ANSWER TO QUESTION 3 PROVIDES A COMPLETE EXPLANATION, GO DIRECTLY TO QUESTION 10.

9. IF YOUR ANSWER TO QUESTION 3 DOES NOT COMPLETELY EXPLAIN THE WAY PEOPLE ARE DISTRIBUTED THROUGHOUT AFRICA, LIST BELOW SOME OTHER REASON(S) THAT MIGHT HELP EXPLAIN THIS (CHECK YOUR ANSWERS TO QUESTIONS 5c AND 6b):

10. Write a sentence that best explains why the population of Africa is distributed the way it is. Be prepared to explain your reasons for this statement in our next class.

INTRODUCTION -- ACTIVITY 4

A TEACHING GUIDE

A) Introeuction: The purpose of this activity is to add to the student's knowledge of the major physical features of Africa and to become familiar with the way people have distributed themselves over this region. An equally important purpose is to acquaint the student with the mode of inquiry that will be used throughout the following units and daily lessons. The Study Guide for Activity 4 and the student answers thereto serve as the vehicles for accomplishing these purposes.

The specific objectives of this activity are:

To know the variety of physical features existant in Africa south of the Sahara.

To know that in many instances there is a direct relationship between population distribution and various geographic factors in this region.

To know how and where the population of this region is distributed.

To determine relevant from irrelevant data.

To be able to read and interpret information portrayed on maps.

To categorize data, note similarities, trends and commonalities.

To make inferences from data.

To synthesize data into a general statement which explains the data relative to the initiatory problem.

B) Materials: Resource maps
Study Guide for Activity 4

C) Suggested Teaching Strategy:

1) Start class by clarifying any questions regarding items 1 and 2 of the Study Guide for Activity 4. Ask the class to indicate the places where there are large concentrations of people and places where there are none or very, very few.	(In doing this have students check each other. "Correctness" of answers should be judged on whether or not the data on the maps support the answers.)

2) Ask volunteers to read their answers to question 10. List the essence of these answers on the board. In case of conflicting answers encourage the students to use the maps to substantiate or refute the positions involved. Make appropriate modifications in the list on the board.

3) Then ask: WHY DO AFRICANS LIVE WHERE THEY DO? Have the class use the items on the board to develop a generalized statement that takes all these items into account. Write it on the board.

4) Then, have the class reflect on how they arrived at this statement.

   a) Ask: WHAT HAVE WE BEEN DOING? To assist the students in answering this, point out that the statement they just made grew out of a problem (quest. 3 on the study guide).

   b) Ask: WHAT STEPS DID YOU GO THROUGH TO GET TO THIS STATEMENT--TO SOLVE THIS PROBLEM? Have the students examine the study guide carefully to identify these steps.

   c) Help the students identify the major steps in inquiry by referring to the study guide questions. Help them explain the nature of each step.

   d) Ask: WHAT IS THIS METHOD CALLED? Point out that this method of inquiry can be used in social studies and is the method they will be using henceforth in the study of Africa south of the Sahara.

   Point out that they have used this method of inquiry during the preceding days. They have

The students should identify the following steps:

Quest. 3 -- The problem
Ans. to 3 -- The hypothesis

Quest. 4 -- if...then statement identifying the consequence of a hypothesis and telling what to look for in order to prove it.

Quest. 5 -- the search for data to prove the hypothesis

5a) -- supporting data
b&c) -- contradictory data

Quest. 7-9 -- evaluating data

Quest. 10 -- the conclusion

a hypothesis about Africa's geography which they articulated in response to the filmstrip the first day. The homework assignments and the filmstrip on climate provided them data against which to check the accuracy of their hypothesis. At the end of yesterday's class they drew some conclusions about their investigation.

e) Refer to the terms developed the first day that describe the physical geography of Africa. Have the students comment on their accuracy in the light of what they now know. Ask the students to describe the physical geography of Africa.

(Have them write these statements in their notes.)

Students should note:

It is varied.
Most of it is savanna.
There is little desert south of the Sahara.
There is little jungle or rain forest.
Africa is a plateau that slopes to the west.
It has a variety of climates--even on the equator.
The climate regions are somewhat symmetrical--in the same order as one goes north or south away from the equator.
and so on...

f) Have the students treat the statement previously made (in answer to #3 above) as a hypothesis. Ask them to make an "if...then" statement based on it. Have them describe how they would test the hypothesis.

Tell the students that the study of Africa using this process of investigation will be continued in the next class.

Distribute the Study Guide for the next activity--INTRODUCTION TO PEOPLES OF AFRICA. Direct the students to complete it and bring it to the next class.

Africans live where they do because...

If the reason(s) Africans live where they do is (are), then...

Select two of the locations listed in question 4 and for each write a short paragraph describing what its <u>climate</u> is like.